UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/538,473 | 06/07/2005 | Thomas Narbeshuber | 273009US0PCT | 2279 |

22850 7590 02/22/2010

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

| EXAMINER | |
|---|---|
| VALENROD, YEVGENY | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1621 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 02/22/2010 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

---

*Ex parte* THOMAS NARBESHUBER, ULRICH STEINBRENNER, DAG WIEBELHAUS, and NILS BOTTKE

---

Appeal 2009-007274
Application 10/538,473
Technology Center 1600

---

Decided: February 19, 2010

---

Before DONALD E. ADAMS, RICHARD M. LEBOVITZ, and STEPHEN WALSH, *Administrative Patent Judges.*

ADAMS, *Administrative Patent Judge.*

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 8 and 10-14, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

## STATEMENT OF THE CASE

The claims are directed to a process for the preparation of alkylarylsulfonates. Claim 8 is illustrative:

8. A process for the preparation of alkylarylsulfonates by

a) reaction of a $C_4$-olefin mixture over a metathesis catalyst to prepare an olefin mixture comprising 2-pentene and/or 3-hexene, and optional removal of 2-pentene and/or 3-hexene,

b) dimerization of the 2-pentene and/or 3-hexene obtained in stage a) in the presence of a dimerization catalyst to give a mixture comprising $C_{10-12}$-olefins, removal of the $C_{10-12}$-olefins and removal of 5 to 30% by weight, based on the $C_{10-12}$-olefins removed, of low-boiling constituents of the $C_{10-12}$-olefins, such that at least 90% of di-or poly-branched olefins are separated off,

c) reaction of the $C_{10-12}$-olefin mixtures obtained in stage b) with an aromatic hydrocarbon in the presence of an alkylation catalyst to form alkyl aromatic compounds, where, prior to the reaction, 0 to 60% by weight, based on the $C_{10-12}$-olefin mixtures obtained in stage b), of linear olefins may additionally be added,

d) sulfonation of the alkyl aromatic compounds obtained in stage c) and neutralization to give alkylarylsulfonates, where, prior to the sulfonation, 0 to 60% by weight, based on the alkyl aromatic compounds obtained in stage c), of linear alkylbenzenes may additionally be added, if no admixing has taken place in stage c),

e) optional mixing of the alkylarylsulfonates obtained in stage d) with 0 to 60% by weight, based on the alkylarylsulfonates obtained in stage d), of linear alkylarylsulfonates, if no admixing has taken place in stages c) and d).

The Examiner relies on the following evidence:

| | | |
|---|---|---|
| Maas et al. | US 2004/0010161 A1 | Jan. 15, 2004 |
| Scheibel et al. | WO 99/05241 | Feb. 4, 1999 |

The rejection presented by the Examiner follows:

Claims 8 and 10-14 stand rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Maas and Scheibel.

We affirm.

## ISSUE

Have Appellants established error in the Examiner's prima facie case of obviousness?

## FINDINGS OF FACT

FF 1. Maas teaches that "[a]lkylbenzenesulfonates (ABS) have been used for a long time as surfactants in detergents and cleaners. Following the use initially of surfactants based on tetrapropylene, which, however, had poor biodegradability, alkylbenzenesulfonates which are as linear as possible (LAS) have since been prepared and used" (Maas 1: ¶ [0002]).

FF 2. Scheibel teaches that:

> Historically, highly branched alkylbenzenesulfonate surfactants, such as those based on tetrapropylene (known as "ABS" or "TPBS") were used in detergents. However, these were found to be very poorly biodegradable. A long period followed of improving manufacturing processes for alkylbenzenesulfonates, making them as linear as practically possible ("LAS"). The overwhelming part of a large art of linear alkylbenzenesulfonate surfactant manufacture is directed to this objective. All relevant large-scale commercial alkylbenzenesulfonate processes in use today are directed to linear alkylbenzenesulfonates.

(Scheibel 1: 22-29; *see also* Ans. 4 (Scheibel teaches "that highly branched alkylbenzenesulfonate surfactants were found to be poorly biodegradable"); Ans. 6 ("The process of Scheibel . . . is irrelevant to the rejection of record because it is only the teaching of unfavorable qualities of the undesired highly branched surfactants that is relevant.") (Emphasis removed).)

FF 3. The Examiner finds that Maas teaches a process for the preparation of alkylarylsulfonates as set forth in Appellants' claim 8, with the exception of removing "90% or more of lower boiling constituents of $C_{10}$-$C_{12}$ olefins, which are di- or poly-branched" (Ans. 3; *see also* App. Br. 4).

FF 4. Both Maas and Scheibel teach that linear alkylbenzenesulfonate surfactants have limitations as well. Specifically, Mass teaches that "linear alkylbenzenesulfonates do not have adequate property profiles in all areas of application" (Maas 1: ¶ [0002]) and Scheibel teaches that "linear alkylbenzenesulfonates . . . would be more desirable if improved for hard water and/or cold water cleaning properties" (Scheibel 1: 29-31).

FF 5. The Examiner finds that "[o]ne skilled in the art would appreciate that 'lower boiling components' referred to by the applicants in claim 8, step 'b' are in fact . . . 'highly branched' . . . . It is well known to those skilled in the art that as the amount of branching is increased, the boiling point is decreased, therefore highly branched = lower boiling" (Ans. 6).

## PRINCIPLES OF LAW

"In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art." *In re Fritch*, 972 F.2d 1260, 1265 (Fed. Cir. 1992). On appeal to this Board, Appellants must show that the Examiner has not sustained the required burden. *See Ex parte Yamaguchi*, 88 USPQ2d 1606, 1608 and 1614 (BPAI 2008) (precedential); *Ex parte Fu*, 89 USPQ2d 1115, 1118 and 1123 (BPAI 2008) (precedential).

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."

*KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). It is proper to "take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 418. *See also id.* at 421 ("A person of ordinary skill is also a person of ordinary creativity, not an automaton."). In sum, the "suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense." *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006).

Arguments not made are waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

## ANALYSIS

The process of Appellants' claim 8 requires, *inter alia*, that "at least 90% of di- or poly-branched olefins are separated off" (Claim 8, part b). Thus, claim 8 reads on the removal of 90-100% of di- or poly-branched olefins.

Based on the foregoing factual findings (FF 1-3) the Examiner concludes that:

> The issue at hand is whether one of ordinary skill in the art would have motivation to remove the higher branched $C_{10}$-$C_{12}$ olefins from the mixture produced in step (b) as described by Maas. Scheibel et al. provide motivation when they describe the poor biodegradability of the highly branched alkylbenzenesulfonate surfactants. In order to improve biodegradability of the surfactants taught by Maas et al. one of ordinary skill in the art would have been motivated to modify the process of Maas et al[.] to remove the higher boiling $C_{10}$-$C_{12}$ olefins prior to alkylation of the aromatic hydrocarbons.

(Ans. 4.)

Appellants contend that since Scheibel teaches that "linear alkylbenzene sulfonates are not without limitations . . . a person of ordinary skill in the art would learn from this reference that highly branched alkylbenzene sulfonate surfactants as well as linear alkylbenzene sulfonates are not perfect compounds being present in surfactant compositions" (App. Br. 4).

While both Maas and Scheibel teach that linear alkylbenzene sulfonates have limitations (FF 4), both references teach that those of ordinary skill in the art sought alkylbenzene sulfonates that were as linear as possible (FF 1 and 2). Notwithstanding Appellants' intimation to the contrary, Scheibel's teaching of the preparation of more desirable alkylbenzene sulfonates does not detract from their teaching of the prior art's preference for alkylbenzene sulfonates that were as linear as possible (FF 4). Accordingly, we are not persuaded by Appellants' contentions to the contrary (App. Br. 4-8; Reply Br. 2-4).

We recognize Appellants' discussion of claims 10-14 at pages 8-9 of the Appeal Brief. For each of claims 10-14 Appellants contend that "[s]ince the combination of Mass et al. and Scheibel et al. fails to suggest the process specified in Claim 8, those references certainly fail to suggest the process recited in Claim[s] 1[0-14]" (App. Br. 8-9). Appellants' contentions regarding claims 10-14 do not represent an argument for the separate patentability of claims 10-14. Accordingly, claims 10-14 fall together with claim 8. 37 C.F.R. § 41.37(c)(1)(vii).

## CONCLUSION OF LAW

Appellants failed to establish error in the Examiner's prima facie case of obviousness.

The rejection of claim 8 under 35 U.S.C § 103(a) as unpatentable over the combination of Maas and Scheibel is affirmed. Claims 10-14 fall together with claim 8.

## TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

## AFFIRMED

cdc

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA VA 22314